LIBRARY
STATE PLANT BOARD

United States Department of Agriculture
Agricultural Research Administration
Bureau of Entomology and Plant Quarantine

ENTOMOLOGICAL TECHNIQUE (ET) CIRCULARS 151 TO 233

(This list and index include the ET circulars that were issued from August 1939 to the end of 1946. Three previous lists and indexes for this series have been issued: 1 to 50 in October 1935, 51 to 100 in December 1937, and 101 to 150 in September 1939.)

ET-151. A dust delivery tube for laboratory experiments with contact insecticides. R. A. Fisher. August 1939.

ET-152. A method for testing the value of chemical mixtures as repellents of the Gulf Coast tick. A. L. Brody. October 1939.

ET-153. A portable wind-direction recorder. R. A. Fulton. January 1940.

ET-154. A low-cost water seal fumigator. A. C. Johnson. January 1940.

ET-155. A laboratory method for the study of insects in their cocoons. L. C. Fife. February 1940.

ET-156. A methyl bromide dispenser for use in the fumigation of quarantined products. C. A. Cain. February 1940.

ET-157. Modified Berlese funnel for collecting thrips. F. F. Bondy. February 1940.

ET-158. A technique for the recovery of very small dead insects in mortality experiments. F. R. Lawson. April 1940.

ET-159. Temperature-humidity controlled cabinets for the study of insects. P. N. Annand and F. H. Harries. April 1940.

ET-160. A system of classifying cabbage according to the extent of caterpillar injury. W. J. Reid, Jr. August 1940.

ET-161. A rearing method for the mass production of Microplectron fuscipennis (Zett.), cocoon parasite of the European spruce sawfly, Gilpinia polytoma (Htg.). F. E. Miller, Jr. August 1940.

ET-162. Construction of a hair-hygrostat with magnetic switch for humidity control in an incubator room. K. D. Arbuthnot. September 1940.

ET-163. A mechanical trap for the sampling of aerial insect populations. J. C. Chamberlin and F. R. Lawson. October 1940.

APR 16 1947

ET-164. Two convenient and easily stored knock-down cages for laboratory and field studies. J. M. Magner and R. A. Blanchard. November 1940.

ET-165. A measured drop method of applying liquid insecticides. E. R. McGovran, G. L. Phillips, and E. L. Mayer. November 1940.

ET-166. Transparent cellophane cocooning units for observing the development of codling moth pupae. W. Machado and D. Collins. November 1940.

ET-167. Temperature and humidity regulation in small incubators. W. G. Bradley and O. E. Berndt. November 1940.

ET-168. A mobile sample-carrying rack. H. W. Rusk. December 1940.

ET-169. Improvements in the standard insect sweep net. W. C. Cook and E. W. Davis. December 1940.

ET-170. Technique employed in producing uniform pea aphid stock for insecticide tests at Madison, Wis. P. V. Stone. December 1940.

ET-171. A scoop for collecting large numbers of small insects from their host plants. W. C. Cook. December 1940.

ET-172. Percentage tables for numbers from 1 to 250. C. A. Clark. December 1940.

ET-173. The technique of photographing insect specimens. A. E. Lantz. January 1941.

ET-174. A demountable isolation cage for field use. L. S. Jones. June 1941.

ET-175. Foot-operated punch. W. G. Bradley and O. E. Berndt. July 1941.

ET-176. An improved spring cage fastener. E. W. Davis and C. H. Feltes. August 1941.

ET-177. Apparatus and method for reinforcing maps for field use. L. B. Parker and R. W. Evans. August 1941.

ET-178. A device for estimating thrips population on citrus foliage. E. A. McGregor. August 1941.

ET-179. A mechanical timing device for laboratory spraying tests. F. W. Carlson and M. A. Yothers. August 1941.

ET-180. A dust gun for laboratory experiments with insecticides. F. H. Harries. September 1941.

ET-181. A power-driven soil-sifting machine. F. W. Carlson and M. A. Yothers. September 1941.

ET-182. A satisfactory tree-trunk screen cage. F. W. Carlson and M. A. Yothers. September 1941.

ET-183. Three new devices for measuring insect populations. F R. Lawson, D. E. Fox, and W. C. Cook. September 1941.

ET-184. Method for securing direct field inoculations in studies of curly-top disease. H. E. Dorst. October 1941.

ET-185. A hand-operated shaker for sifting soil. S. H. Shirck. October 1941.

ET-186. Determining the catches of cigarette beetles and tobacco moths made in insect traps. R. W. Brubaker and H. N. Pollard. October 1941.

ET-187. An adjustable nozzle for use in bark beetle control work. J. C. Evenden. January 1942.

ET-188. A dust-mixing apparatus for preparing small quantities of coated or impregnated dust for laboratory use. T. A. Brindley, W. E. Peay, and F. G. Hinman. January 1942.

ET-189. A leaf punch for use in insecticidal residue studies. R. A. Fulton. January 1942.

ET-190. The preparation of insecticidal aerosols by the use of liquefied gases. L. D. Goodhue and W. N. Sullivan. April 1942.

ET-191. An apparatus for fumigating insects with hydrocyanic acid gas in the laboratory. E. M. Livingstone. April 1942.

ET-192. Method for the preparation of spore-dust mixtures of type A milky disease of Japanese beetle larvae for field inoculation. S. R. Dutky. May 1942.

ET-193. Sweeping with an insect-collecting net to determine when and where to dust for pea weevil control. T. A. Brindley and F. G. Hinman. May 1942.

ET-194. A simple method for preparing lantern slides. F. Acree, Jr. and H. L. Haller. June 1942.

ET-195. Procedure for mass rearing of adults of Tiphia vernalis Roh., a Japanese beetle parasite. L. B. Parker. June 1942.

ET-196. An aphid trap. W. A. Shands, G. W. Simpson, and F. H. Lathrop. June 1942.

ET-197. A recovery cage to determine the numbers of flea beetles emerging from soil surrounding host plants. J. U. Gilmore and C. Levin. July 1942.

ET-198. A wheelbarrow assembly for applying concentrated sprays to experimental plots. S. F. Potts. July 1942.

ET-199. A power-driven mixer for making oil emulsions. M. DuPree and W. Mathis. September 1942.

ET-200. Hand-operated equipment for precision dusting. C. H. Batchelder and A. V. Cosenza. September 1942.

ET-201. Method and equipment for conducting laboratory experiments with insecticides for the control of insects that pupate in the soil. O. I. Snapp. September 1942.

ET-202. A constant levelling device for an atomizer type sprayer. R. A. Fulton and C. F. Henderson. October 1942.

ET-203. A methyl bromide soil injector. S. S. Easter and W. J. Dunn. November 1942.

ET-204. An insect selectivity cage for testing plant repellence. E. W. Davis and G. T. York. February 1943.

ET-205. Cages used in fumigation tests with adult Japanese beetles, their distribution and recovery. H. C. Donohoe. March 1943.

ET-206. Counting plates for use with low-power magnification. F. H. Shirck. March 1943.

ET-207. Suction attachment for removing dust from hopper of wheelbarrow power duster. C. W. Getzendaner. March 1943.

ET-208. A laboratory apparatus and procedure for testing aqueous spray suspensions as insecticides. E. R. McGovran and E. L. Mayer. May 1943.

ET-209. A fast-motion sifting machine. O. G. Bacon. May 1943.

ET-210. An air-pressure tank for the pneumatic application of liquid fumigants. H. H. Walkden and H. J. Barre. May 1943.

ET-211. Chemical determination of DDT. S. A. Hall, M. S. Schechter, and E. E. Fleck. November 1944.

ET-212. A hopper and mechanism for distribution of baits and dust by airplanes for insect control. C. N. Husman. July 1943.

ET-213. A laboratory method for rearing and parasitizing the California red scale for toxicological studies. C. F. Henderson, C. L. Stucker, and H. V. McBurnie. October 1943.

ET-214. A duster for laboratory experiments with insecticides. F. H. Harries. September 1943.

ET-215. Experimental methods in making orchard tests for codling moth control in the West. E. J. Newcomer, F. P. Dean, and C. C. Cassil. November 1943.

ET-216. Dispenser for aerosols and highly volatile fumigants. F. F. Smith, L. D. Goodhue, and W. R. Ballinger. March 1944.

ET-217. A small injector for use in mixing sprays. F. P. Dean. June 1944.

ET-218. An air-pressure tank for use in the field application of liquid sprays. F. F. Smith, P. H. Lung, and A. L. Boswell. July 1944.

ET-219. Injector for fumigants in liquid form. R. D. Chisholm, W. C. Fest, and A. C. Mason. October 1944.

ET-220. A sticky trap board used in scouting for pear psylla. G. H. Kaloostian and M. S. Yeomans. November 1944.

ET-221. A shipping container for adult insects. C. A. Clark. May 1945.

ET-222. Microscope lamp. F. Munger. June 1945.

ET-223. The evidence required to show synergistic action of insecticides and a short cut in analysis. F. M. Wadley. June 1945.

ET-224. A method of rating fumigation chambers for tightness. R. D. Chisholm and L. Koblitsky. September 1945.

LIBRARY
STATE PLANT BOARD

ET-225. A method of estimating beet leafhopper populations from the proportion of uninfested plants. M. F. Bowen. November 1945.

ET-226. A hibernation cage for the pink bollworm. I. Shiller. January 1946.

ET-227. An improved oviposition cage for moths of the European corn borer. A. M. Vance and H. R. Painter. February 1946.

ET-228. Equipment for the dispersal of insecticides by means of aircraft. C. N. Husman, O. M. Longcoy, and H. S. Hensley.

ET-229. A special chamber for testing insecticidal sprays. A. W. Lindquist and A. H. Madden. July 1946.

ET-230. A simple cage for testing DDT residual treatments. A. H. Madden and A. W. Lindquist. July 1946.

ET-231. A power sprayer for applying concentrated insecticides. J. N. Tenhet. August 1946.

ET-232. Growth stages of corn as related to European corn borer infestation. C. H. Batchelder. August 1946.

ET-233. A system of filing and routing samples of chemicals for insecticide testing. M. W. Oberg, H. A. Jones, and E. F. Knipling. August 1946.

INDEX

Numbers following item signify ET Circulars (not pages).

ACREE, FRED, Jr., and HALLER, H. L.: A Simple Method for Preparing Lantern Slides........................194

Aerial-insect populations, trap for...163

Aerosols--
  dispenser for........................216
  liquefied-gas preparation method....190

Aircraft, equipment for insecticide dispersal...........................228

Airplane, hopper for distributing baits and dusts.....................212

Air-pressure tank, use in application of liquid fumigants.................210

Amblyomma maculatum. See Gulf Coast tick.

ANNAND, P. N., and HARRIES, F. H.: Temperature-Humidity Controlled Cabinets for the Study of Insects...159

Aonidiella aurantii. See Scale, California red.

Aphid trap, construction.............196

ARBUTHNOT, K. D.: Construction of a Hair-Hygrostat With Magnetic Switch for Humidity Control in an Incubator Room............................162

Bacillus popilliae, spore-dust mixtures in type A milky disease....192

BACON, OSCAR G.: A Fast-Motion Sifting Machine.......................209

Baits, distributing by airplane.......212

BALLINGER, W. R., SMITH, FLOYD F., and GOODHUE, L. D.: Dispenser for Aerosols and Highly Volatile Fumigants..............................216

Bark beetle control work, nozzle for...187

BARRE, H. J., and WALKDEN, H. H.: An Air-Pressure Tank for the Pneumatic Application of Liquid Fumigants......210

BATCHELDER, C. H.: Growth Stages of Corn as Related to European Corn Borer Infestation....................232

----- and COSENZA, A. V.: Hand-Operated Equipment for Precision Dusting.200

Beet leafhopper--
  collecting scoop for.................171
  population estimation method.........225
  population measuring devices.........183
  portable wind-direction recorder for use in dispersal studies.......153
  repellent sprays for.................204
  trap for.............................163

Berlese funnel, modified, for collecting thrips.........................157

BERNDT, O. E., and BRADLEY, W. G.:
  Foot-Operated Punch..................175
  Temperature and Humidity Regulation in Small Incubators.................167

Bollworm, pink, hibernation cage.......226

BONDY, FLOYD F.: Modified Berlese Funnel for Collecting Thrips.........157

BOSWELL, ANTHONY L., SMITH, FLOYD F., and LUNG, PAUL H.: An Air-Pressure Tank for Use in the Field Application of Liquid Sprays..............218

BOWEN, M. F.: A Method of Estimating Beet Leafhopper Populations from the Proportion of Uninfested Plants..225

BRADLEY, W. G., and BERNDT, O. E.:
  Foot-Operated Punch..................175
  Temperature and Humidity Regulation in Small Incubators................167

BRINDLEY, T. A., and HINMAN, F. G.: Sweeping With an Insect-Collecting Net to Determine When and Where to Dust for Pea Weevil Control.........193

------- PEAY, W. E., and HINMAN, F. G.: A Dust-Mixing Apparatus for Preparing Small Quantities of Coated or Impregnated Dust for Laboratory Use.................................188

BRODY, ARTHUR L.: A Method for Testing the Value of Chemical Mixtures as Repellents of the Gulf Coast Tick...........................151

BRUBAKER, R. W., and POLLARD, H. N.: Determining the Catches of Cigarette Beetles and Tobacco Moths Made in Insect Traps................186

Bruchus pisorum. *See* Pea weevil.

Cabbage, classification system according to caterpillar injury.......160

Cabinets, temperature-humidity controlled............................159

Cage--
  demountable isolation...............174
  fastener, improved spring...........176
  for DDT residual tests..............230
  fumigation tests with Japanese beetles............................205
  hibernation, for pink bollworm......226
  knock-down, for field studies.......164
  selectivity for testing plant repellence.........................204
  tree-trunk screen...................182

CAIN, CHAS. A.: A Methyl Bromide Dispenser for Use in the Fumigation of Quarantined Products................156

CARLSON, F. W., and YOTHERS, M. A.:
  A Mechanical Timing Device for Laboratory Spraying Tests.........179
  A Power-Driven Soil-Sifting Machine............................181
  A Satisfactory Tree-Trunk Screen Cage..............................182

Carpocapsa pomonella. *See* Codling moth.

CASSIL, C. C., NEWCOMER, E. J., and DEAN, F. P.: Experimental Methods in Making Orchard Tests for Codling Moth Control in the West.................215

Caterpillar injury, classifying cabbage by..........................160

CHAMBERLIN, JOSEPH C.: A Mechanical Trap for the Sampling of Aerial Insect Populations..................163

Chemicals, filing and routing system..233

CHISHOLM, ROBERT D., and KOBLITSKY, LOUIS: A Method of Rating Fumigation Chambers for Tightness.......224

---- FEST, W. C., and MASON, A. C.: Injector for Fumigants in Liquid Form...............................219

Cigarette beetle--
  determining catches in insect traps.186
  fumigating with hydrocyanic acid gas.............................191

Citrus thrips, population estimation device............................178

CLARK, CHARLES A.: A Shipping Container for Adult Insects............221
  Percentage Tables for Numbers from 1 to 250.........................172

Cocoons--
  cellophane, for observing codling moth pupae.......................166
  insects in, laboratory study method...........................155

Codling moth--
  cellophane cocoon for observation of pupae.........................166
  orchard control tests in West.......215

COOK, W. C.: A Scoop for Collecting Large Numbers of Small Insects From Their Host Plants....................171

---- and DAVIS, E. W.: Improvements in the Standard Insect Sweep Net....169

---- LAWSON, F. R., and FOX, D. E.: Three New Devices for Measuring Insect Populations........183

Corn, infestation by European corn borer..................................232

Corn borer, European--
  infestation of corn..................232
  oviposition cage for.................227
  shipping container for..............221

COSENZA, A. V., and BATCHELDER, C. H.: Hand-Operated Equipment for Precision Dusting.........................200

Counting plates for low-power magnification.........................206

Curly-top disease, method for field inoculations.........................184

DDT--
  chemical determination..............211
  residual treatments, testing........230

DAVIS, E. W., and COOK, W. C.: Improvements in the Standard Insect Sweep Net............................169

---- and FELTES, C. H.: An Improved Spring Cage Fastener................176

---- and YORK, G. T.: An Insect Selectivity Cage for Testing Plant Repellence...........................204

DEAN, F. P.: A Small Injector for Use in Mixing Sprays....................217

---- NEWCOMER, E. J., and CASSIL, C. C.: Experimental Methods in Making Orchard Tests for Codling Moth Control in the West.................215

Dispenser--
  for aerosols.........................216
  methyl bromide, for fumigating quarantined products..............156

DONOHOE, HEBER C.: Cages Used in Fumigation Tests With Adult Japanese Beetles, Their Distribution and Recovery.............................205

DORST, HOWARD E.: Method for Securing Direct Field Inoculations in Studies of Curly-Top Disease...............184

DUNN, WILLIAM J., and EASTER, STEPHEN S.: A Methyl Bromide Soil Injector..203

DUPREE, MINTER, and MATHIS, WILLIS: A Power-Driven Mixer for Making Oil Emulsions.............................199

Dust--
  delivery tube, for contact insecticides......................151
  gun, construction...................200
  gun, for testing insecticides.......180
  hopper, for airplane distribution of baits..........................212
  mixer, for making small quantities..188
  removal by suction from wheelbarrow power duster......................207

Duster--
  for laboratory use..................214
  suction attachment for..............207

Dusting, precision, equipment.........200

Dusts, coated or impregnated, mixing apparatus for........................188

DUTKY, S. R.: Method for the Preparation of Spore-Dust Mixtutes of Type A Milky Disease of Japanese Beetle Larvae for Field Inoculation.192

EASTER, STEPHEN S., and DUNN, WILLIAM J.: A Methyl Bromide Soil Injector..203

Epitrix parvula. *See* Tobacco flea beetle.

European corn borer. See Corn borer, European.

Eutettix tenellus. See Beet leafhopper.

EVANS, R. W., and PARKER, L. B.: Apparatus and Method for Reinforcing Maps for Field Use....................177

EVENDEN, JAMES C.: An Adjustable Nozzle for Use in Bark Beetle Control Work..................................187

FELTES, C. H., and DAVIS, E. W.: An Improved Spring Cage Fastener........176

FEST, W. C., CHISHOLM, R. D., and MASON, A. C.: Injector for Fumigants in Liquid Form..........................219

FIFE, L. COURTNEY: A Laboratory Method for the Study of Insects in Their Cocoons..................................155

Filing system, chemical samples for insecticide tests.....................233

FISHER, ROBERT A.: A Dust Delivery Tube for Laboratory Experiments With Contact Insecticides.................151

Flea beetles, recovery cage............197

FLECK, ELMER E., and HALL, S. A., and SCHECHTER, MILTON S.: Chemical Determination of DDT.................211

Flowmeter, construction................191

FOX, D. E., LAWSON, F. R., and COOK, W. C.: Three New Devices for Measuring Insect Populations.........183

FULTON, ROBERT A.:
  A Leaf Punch for Use in Insecticidal Residue Studies....................189
  A Portable Wind-Direction Recorder...153

---- and HENDERSON, CHARLES F.: A Constant Levelling Device for An Atomizer Type Sprayer................202

Fumigants--
  liquid, application by air-pressure tank..............................210
  liquid, injector for................219
  volatile, dispenser for.............216

Fumigation--
  chambers, gas tightness.............224
  hydrocyanic acid gas, apparatus for.191
  quarantined products, methyl bromide dispenser for......................156
  tests with cages of Japanese beetles............................205

Fumigator, low-cost water seal........154

Funnel, modified Berlese, for collecting thrips..................157

GETZENDANER, C. W.: Suction Attachment for Removing Dust from Hopper of Wheelbarrow Power Duster...........207

GILMORE, J. U., and LEVIN, CLEMENCE: A Recovery Cage to Determine the Numbers of Flea Beetles Emerging From Soil Surrounding Host Plants...197

Gilpinia polytoma. See Spruce sawfly, European.

GOODHUE, L. D.: The Preparation of Insecticidal Aerosols by the Use of Liquefied Gases.......................190

----- and SMITH, FLOYD F., and BALLINGER, W. R.: Dispenser for Aerosols and Highly Volatile Fumigants............................216

Gulf Coast tick, repellents, testing method..............................152

Hair-hygrostat, construction..........162

HALL, S. A., SCHECHTER, MILTON S., and FLECK, ELMER E.: Chemical Determination of DDT................211

HALLER, H. L., and ACREE, FRED, Jr.: A Simple Method for Preparing Lantern Slides.......................194

HARRIES, F. H.: A Dust Gun for Laboratory Experiments With Insecticides..180
  A Duster for Laboratory Experiments With Insecticides................214

---- and ANNAND, P. N.: Temperature-Humidity Controlled Cabinets for the Study of Insects................159

HENDERSON, CHAS. F., and FULTON, ROBERT A.: A Constant Levelling Device for An Atomizer Type Sprayer...202

---- STUCKER, CALVIN L., and MCBURNIE, HORACE V.: A Laboratory Method for Rearing and Parasitizing the California Red Scale for Toxicological Studies....................213

HENSLEY, H. S., HUSMAN, C. M., and LONGCOY, O. M.: Equipment for The Dispersal of Insecticides by Means of Aircraft.........................228

Hibernation cage for pink bollworm....226

HINMAN, F. G., and BRINDLEY, T. A.: Sweeping With An Insect-Collecting Net To Determine When and Where To Dust for Pea Weevil Investigations..193

---- BRINDLEY, T. A., and PEAY, W. E.: A Dust-Mixing Apparatus for Preparing Small Quantities of Coated or Impregnated Dust for Laboratory Use.................................188

Hopper--
  dust distribution by airplane.......212
  dust removal by suction attachment..207

House flies, DDT testing cage.........230

Humidity control, hair-hygrostat......162

Humidity-temperature--
  controlled cabinets.................159
  regulation in incubators............167

HUSMAN, CHESTER N.: A Hopper and Mechanism for Distribution of Baits and Dust by Airplanes for Insect Control..............................212

---- LONGCOY, O. M., and HENSLEY, H.S.: Equipment for Dispersal of Insecticides by Means of Aircraft........228

Hydrocyanic acid gas, fumigation apparatus.............................191

Incubator--
  room, humidity control...............162
  temperature and humidity regulation..........................167

Injector for mixing sprays.............217

Insecticides--
  apparatus for testing spray suspensions........................208
  concentrated, sprayer for............231
  contact, dust delivery tube for......151
  dispersal by aircraft................228
  dust gun for.........................180
  duster for laboratory use............214
  filing and routing system............223
  measured-drop method of application..165
  soil pupating insects, experiments for testing against................201
  synergistic action, evidence of......223
  testing chamber......................229

Insects--
  collecting scoop.....................171
  in cocoons, study method.............155
  photographing technique..............173
  populations, aerial, trap for........163
  populations, measuring devices.......183
  shipping container for...............221
  small dead, recovery technique.......158

Isolation cages, demountable...........174

Japanese beetle--
  cages for fumigation tests...........205
  spore-dust mixtures of type A milky disease for........................192

JOHNSON, A. C.: A Low-Cost Water Seal Fumigator............................154

JONES, HOWARD A., OBERG, MARION W., and KNIPLING, E. F.: A System of Filing and Routing Samples of Chemicals for Insecticide Testing....233

JONES, LAURENCE S.: A Demountable Isolation Cage for Field Use.........174

KALOOSTIAN, GEORGE H., and YEOMANS, MANNING, S.: A Sticky Trap Board Used in Scouting for Pear Psylla.....220

KNIPLING, E. F., OBERG, MARION W., and JONES, HOWARD A.: A System of Filing and Routing Samples of Chemicals for Insecticide Testing..............233

KOBLITSKY, LOUIS, and CHISHOLM, ROBERT D.: A Method for Rating Fumigation Chambers for Tightness...............224

Lamp, microscope.........................222

Lantern slides, preparation............194

LANTZ, A. E.: The Technique of Photographing Insect Specimens......173

Lasioderma serricorne. *See* Cigarette beetle.

LATHROP, F. H., SHANDS, W. A., and SIMPSON, G. W.: An Aphid Trap........196

LAWSON, F. R.: A Technique for the Recovery of Very Small Dead Insects in Mortality Experiments.............158

---- FOX, D. E., and COOK, W. C.: Three New Devices for Measuring Insect Populations...................183

Leaf punch, for insecticidal residue studies...............................189

Leveling device, atomizer type sprayer................................202

LEVIN, CLEMENCE, and GILMORE, J. U.: A Recovery Cage to Determine the Numbers of Flea Beetles Emerging From Soil Surrounding Host Plants....197

LINDQUIST, ARTHUR W., and MADDEN, A. H.: A Simple Cage for Testing DDT Residual Treatments..............230

A Special Chamber for Testing Insecticidal Sprays..................229

LIVINGSTONE, E. M.: An Apparatus for Fumigating Insects With Hydrocyanic Acid Gas in the Laboratory...........191

LONGCOY, O. M., HUSMAN, C. M., and HENSLEY, H. S.: Equipment for the Dispersal of Insecticides by Means of Aircraft.........................228

LUNG, PAUL H., SMITH, FLOYD F., and BOSWELL, ANTHONY L.: An Air-Pressure Tank for Use in the Field Application of Liquid Sprays...................218

MACHADO, WILLIAM: Transparent Cellophane Cocooning Units for Observing the Development of Codling Moth Pupae.........................166

Macrosiphum (*Illinoia*) *pisi*. *See* Pea aphid.

MADDEN, A. H., and LINDQUIST, ARTHUR W.: A Simple Cage for Testing DDT Residual Treatments................230

------ and LINDQUIST, ARTHUR W.: A Special Chamber for Testing Insecticidal Sprays.................229

MAGNER, J. MARSHALL: Two Convenient and Easily Stored Knock-Down Cages for Laboratory and Field Studies....164

Magnetic switch for humidity control..162

Maps, reinforcing apparatus...........177

MASON, A. C., CHISHOLM, R. D., and FEST, W. C.: Injector for Fumigants in Liquid Form.....................219

MATHIS, WILLIS, and DUPREE, MINTER: A Power-Driven Mixer for Making Oil Emulsions......................199

MAYER, E. L., and MCGOVRAN, E. R.: A Laboratory Apparatus and Procedure for Testing Aqueous Spray Suspensions as Insecticides....................208

------ MCGOVRAN, E. R., and PHILLIPS, G. L.: A Measured Drop Method of Applying Liquid Insecticides........165

MCGREGOR, E. A.: A Device for
  Estimating Thrips Population on
  Citrus Foliage....................178

Methyl bromide--
  dispenser for fumigation of quarantined products..................156
  soil injector.....................203

Microplectron fuscipennis--
  rearing method....................161

Microscope lamp.....................222

Milky disease, type A, spore-dust
  mixtures for Japanese beetle
  larvae............................192

MILLER, FRANK E., Jr.: A Rearing
  Method for the Mass Production of
  Microplectron fuscipennis (Zett.),
  Cocoon Parasite of the European
  Spruce Sawfly, *Gilpinia polytoma*
  (Htg.)............................161

Mixer, power-driven, for oil
  emulsions.........................199

Mortality experiments, recovery
  technique for small dead insects..158

MUNGER, FRANCIS: Microscope Lamp....222

Musca domestica. *See* Houseflies.

NEWCOMER, E. J., DEAN, F. P., and
  CASSIL, C. C.: Experimental Methods
  in Making Orchard Tests for Codling
  Moth Control in the West..........215

Nozzle for bark beetle control work.187

OBERG, MARION W., JONES, HOWARD A.,
  and KNIPLING, E. F.: A System of
  Filing and Routing Samples of
  Chemicals for Insecticide Testing.233

Oil emulsions, power-driven mixer
  for...............................199

Orchard tests for codling moth
  control in West...................215

Oviposition cage, European corn
  borer.............................227

PAINTER, H. R., and VANCE, A. M.:
  An Improved Oviposition Cage
  for Moths of the European Corn Borer.227

Parasitization studies, percentage
  tables for........................172

PARKER, L. B.: Procedure for Mass
  Rearing of Adults of *Tiphia vernalis*,
  a Japanese Beetle Parasite........195

------- and EVANS, R. W.: Apparatus
  and Method for Reinforcing Maps for
  Field Use.........................177

Pea--
  aphids, stock plants, production
    technique.......................170
  weevil, sweeping to determine where
    to dust.........................193
  weevil, trap for..................163

Pear psylla, trap board as control
  measure...........................220

Pectinophora gossypiella. *See* Pink
  bollworm.

Percentage tables,
  numbers 1-250.....................172

PEAY, W. E., BRINDLEY, T. A., and
  HINMAN, F. G.: A Dust-Mixing
  Apparatus for Preparing Small
  Quantities of Coated or Impregnated
  Dust for Laboratory Use...........188

Pectinophora gossypiella. *See*
  Bollworm, pink.

PHILLIPS, G. L., MCGOVRAN, E. R., and
  MAYER, E. L.: A Measured Drop
  Method of Applying Liquid
  Insecticides......................165

Photography, technique for insects.....173

Plant repellence, selectivity cage
  for testing.......................204

Plates, counting, for low-power
  magnification.....................208

POLLARD, H. N., and BRUBAKER, R. W.: Determinning the Catches of Cigarette Beetles and Tobacco Moths in Insect Traps........................186

Popillia japonica. *See* Japanese beetle.

POTTS, S. F.: A Wheelbarrow Assembly for Applying Concentrated Sprays to Experimental Plots...............198

Psylla pyricola. *See* Pear psylla.

Punch, foot-operated..................175

Quarantined products, for methyl bromide dispenser fumigating........156

Rack, sample-carrying.................168

REID, W. J., Jr.: A System of Classifying Cabbage According to the Extent of Caterpillar injury........160

Repellents, Gulf Coast tick, testing method.......................... ...152

Residue studies, leaf punch for.......189

Routing system, chemical samples for insecticide tests...................233

RUSK, H. W.: A Mobile Sample-Carrying Rack...................................168

Sample-carrying rack..................168

Sampling devices for insect population measurement.............183

Scale, California red, rearing and parasitizing method.................213

SCHECHTER, MILTON S., and HALL, S. A., and FLECK, ELMER E.: Chemical Determination of DDT...............211

Scirtothrips citri. See **Citrus** thrips.

Scoop for collecting insects..........171

Shaker, hand-operated, for sifting soil.................................185

SHANDS, W. A., SIMPSON, G. W., and LATHROP, F. H.: An Aphid Trap........196

SHILLER, IVAN: A Hibernation Cage for the Pink Bollworm....................226

Shipping container for adult insects...221

SHIRCK, F. H.:
- A Hand-Operated Shaker for Sifting Soil.................................185
- Counting Plates for Use With Low-Power Magnification................206

Sifting machine, fast-motion..........209

SIMPSON, G. W., SHANDS, W. A., and LATHROP, F. H.: An Aphid Trap........196

SMITH, FLOYD F., GOODHUE, L. D., and BALLINGER, W. R.: Dispenser for Aerosols and Highly Volatile Fumigants............................216

---- LUNG, PAUL H., and BOSWELL, ANTHONY L.: An Air-Pressure Tank for Use in the Field Application of Liquid Sprays.........................218

SNAPP, PLIVER I.: Method and Equipment for Conducting Laboratory Experiments With Insecticides for the Control of Insects That Pupate in the Soil..........................201

Soil--
- injector, methyl bromide............203
- shaker for sifting..................185
- sifting machine, power-driven.......181

Sprayer--
- leveling device for.................202
- power, for concentrated insecticide.231

Sprays--
- air-pressure tank for field application........................218
- injector for mixing.................217
- suspensions, apparatus for testing..208
- testing chamber.....................229
- wheelbarrow assembly for applying...198

STONE, PHILIP W.: Technique Employed in Producing Uniform Pea Aphid Stock for Insecticide Tests at Madison, Wis.................................170

STUCKER, CALVIN L., HENDERSON, CHAS. F., and MCBURNIE, HORACE V.: A Laboratory Method for Rearing and Parasitizing the California Red Scale for Toxicological Studies.....213

Suction attachment, for wheelbarrow power duster.........................207

Sweep net--
- improvements.........................169
- use in pea weevil control...........193

Synergism and insecticide analysis....223

Tank, air-pressure--
- application of liquid fumigants.....210
- application of sprays...............218

Temperature-humidity--
- controlled cabinets.................159
- regulation in incubators............167

TENHET, JOSEPH N.:
- A Power Sprayer for Applying Concentrated Insecticides.........231
- A Special Chamber for Testing Insecticidal Sprays...............229

Thrips--
- Berlese funnel for collecting.......157
- population estimation device........178

Tick, Gulf Coast, repellents, testing method..............................152

Tiphia vernalis, rearing method.......195

Tobacco--
- flea beetles, recovery cage.........197
- moths, determining catches in insect traps..............................186

Trap--
- aphid...............................196
- board for pear psylla scouting.......220
- mechanical, for sampling aerial insect populations.................163

Tree-trunk screen cage.................182

VANCE, A. M., and PAINTER, H. R.: An Improved Oviposition Cage for Moths of the European Corn Borer.....227

WADLEY, F. M.: The Evidence Required to Show Synergistic Action of Insecticides and a Short Cut in Analysis..............................223

WALKDEN, H. H., and BARRE, H. J.: An Air-Pressure Tank for the Pneumatic Application of Liquid Fumigants............................210

Water-seal fumigator, low-cost.........154

Wheelbarrow--
- assembly for spraying................198
- power duster, suction attachment for dust removal.......................207

Wind-direction recorder, portable......153

YEOMANS, MANNING S., and KALOOSTIAN, GEORGE H.: A Sticky Trap Board Used in Scouting of Pea Psylla............220

YORK, G. T., and DAVIS, E. W.: An Insect Selectivity Cage for Testing Plant Repellence.....................204

YOTHERS, M. A., and CARLSON, F. W.:
- A Power-Driven Soil-Sifting Machine..181
- A Satisfactory Tree-Trunk Screen Cage...............................182

o o O o o

UNIVERSITY OF FLORIDA
3 1262 09242 9587